

AMENDMENTS TO THE CLAIMS

Listing of Claims

1-18 (Canceled)

19. (New) A method of promoting the biosynthesis of tocopherol in a transgenic plant, by which method the expression of homogentisate dioxygenase (HGD) in said plant is inhibited.

20. (New) The method of claim 19, which method comprises transforming a plant with a recombinant vector comprising an expression cassette which contains, under the genetic control of regulatory nucleic acid sequences, at least one anti-HGD nucleic acid sequence which is transcribable into an antisense nucleic acid sequence capable of inhibiting HGD activity.

21. (New) The method of claim 20, wherein said antisense nucleic acid, upon transcription in said plant, is capable of hybridizing to mRNA encoding HGD, the coding sequence of which comprises a sequence motif of SEQ ID NO:1

22. (New) The method of claim 20, wherein said expression cassette encompasses an HGD sequence motif in accordance with SEQ ID NO:1 in antisense orientation.

23. (New) The method of claim 20, wherein the anti-HGD sequence is under the genetic control of a plant-specific promoter.

24. (New) The method of claim 20, wherein said vector encompasses at least one expression construct of the type:

5'-plant-specific-promoter/anti-HGD/terminator-3',

where the individual elements are functionally linked to each other.

25. (New) The method as claimed in claim 24, wherein said vector encompasses the following expression construct:

35S promoter/anti-HGD/OCS terminator

26. (New) The method of claim 20, wherein said vector is contained in a microorganism.

27. (New) The method as claimed in claim 26, wherein said microorganism is of the genus *Agrobacterium*.

28. (New) The method of claim 27, wherein said microorganism is of the species *Agrobacterium tumefaciens*.

29. (New) The method of claim 19, wherein the transgenic plant is a crop plant selected from the group consisting of cereals, maize, soybeans, rice, cotton, sugar beet, canola, sunflowers, flax, potatoes, tobacco, tomatoes, oilseed rape, alfalfa, salad species, and the various tree, nut and grapevine species.

30. (New) The method of claim 29, where the plant is oilseed rape.

31. (New) The method of claim 30, wherein tocopherol biosynthesis is promoted in rape seeds.

32. (New) A transgenic plant, wherein tocopherol production is promoted by a method according to claim 19, or transgenic cells, tissue, organs or transgenic propagation material thereof.

33. (New) Seeds of a transgenic plant according to claim 32.

34. (New) A method of producing tocopherol in a plant, comprising:

- (a) transforming a plant cell to express an anti-HGD nucleic acid sequence which inhibits HGD activity;
- (b) generating a plant from the transformed plant cell of step (a);
- (c) recovering tocopherol from the plant generated in step (b).

35. (New) The method of claim 34, wherein the anti-HGD nucleic acid sequence is an antisense sequence.

36. (New) A method for generating transgenic plants with improved tocopherol production, comprising transforming plants, which are capable of producing tocopherol, with at least one vector or at least one microorganism comprising a construct encoding an anti-HGD nucleic acid sequence which when expressed inhibits HGD activity.

37. (New) The method of claim 36, wherein the anti-HGD nucleic acid sequence is an antisense sequence.

38. (New) A method for generating transgenic plants which produce tocopherol, comprising:

- (a) transforming plant cells, plant tissue, plant organs, or protoplasts thereof from plants which are capable of producing tocopherol, with at least one vector or at least one microorganism comprising a construct encoding an anti-HGD nucleic acid sequence which when expressed inhibits HGD activity; and
- (b) regenerating a plant from the plant cells, plant tissue, plant organs, or protoplasts thereof.

39. (New) The method of claim 38, wherein the anti-HGD nucleic acid sequence is an antisense sequence.

40. (New) A transgenic crop plant which produces tocopherol, said transgenic plant containing and expressing a nucleic acid construct encoding an anti-HGD nucleic acid sequence which inhibits HGD activity.

41. (New) The transgenic crop plant of claim 40, wherein the anti-HGD nucleic acid sequence is an antisense sequence.

42. (New) Seeds of a transformed plant according to claim 40.

43. (New) Seeds of a transformed plant according to claim 41.